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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/611,757	06/30/2003	Robert W. Turner	BO1 - 0268US	5016	
60483 LEE & HAYES	7590 04/19/200 S, PLLC	1	EXAMINER		
421 W. RIVER	•	TABATABAI, ABOLFAZL			
SUITE 500 SPOKANE, WA	A 99201		ART UNIT	PAPER NUMBER	
			2624		
				·	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE		
3 MONTHS		04/19/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	A1:4(-)					
	Application No. 10/611,757	Applicant(s) TURNER ET AL.					
Office Action Summary	Examiner	Art Unit					
·	Abolfazi Tabatabai	2624	•				
The MAILING DATE of this communication ap	· ·		Idress				
Period for Reply		•					
A SHORTENED STATUTORY PERIOD FOR REPL WHICHEVER IS LONGER, FROM THE MAILING D.  - Extensions of time may be available under the provisions of 37 CFR 1. after SIX (6) MONTHS from the mailing date of this communication.  - If NO period for reply is specified above, the maximum statutory period.  - Failure to reply within the set or extended period for reply will, by statut Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	DATE OF THIS COMMUNICATION 136(a). In no event, however, may a reply be tim will apply and will expire SIX (6) MONTHS from e, cause the application to become ABANDONE	N. nely filed the mailing date of this c D (35 U.S.C. § 133).					
Status							
1)⊠ Responsive to communication(s) filed on 30 J	une 2003						
<u> </u>							
<u> </u>	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is						
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.							
Disposition of Claims							
4) ☐ Claim(s) 1-33 is/are pending in the application	<b>).</b>						
•	4a) Of the above claim(s) is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.							
6)⊠ Claim(s) <u>1-3,10-21,28,29 and 31-33</u> is/are rejected.							
7) Claim(s) <u>4-9,22-27 and 30</u> is/are objected to.	-						
8) Claim(s) are subject to restriction and/o	_						
Application Papers							
9) The specification is objected to by the Examine	er.						
10)⊠ The drawing(s) filed on <u>30 June 2003</u> is/are: a)⊠ accepted or b)□ objected to by the Examiner.							
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).							
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).							
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.							
Priority under 35 U.S.C. § 119							
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of:	n priority under 35 U.S.C. § 119(a)	-(d) or (f).					
<ol> <li>Certified copies of the priority document</li> </ol>	ts have been received.		•				
2. Certified copies of the priority documents have been received in Application No							
<ol><li>Copies of the certified copies of the prior</li></ol>		ed in this National	Stage				
application from the International Burea	• • •						
* See the attached detailed Office action for a list of the certified copies not received.							
			•				
Attachment(s)							
Notice of References Cited (PTO-892)  4) Interview Summary (PTO-413) Paper No(s)/Mail Date							
(P1 O-948)    Σ Information Disclosure Statement(s) (PTO/SB/08)	atent Application						
Paper No(s)/Mail Date <u>6/30/2003</u> . 6) Other:							

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## **DETAILED ACTION**

# Claim Rejections - 35 USC § 101

### 1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

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2. Claim 11-20, 31 and 32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

3. Claims 11 and 31 recite "A computer program product <u>residing</u> on a computer readable medium for sharpening on or more bands of sensor data in the visual spectrum, the computer program product...." embodying functional descriptive material However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" — Guidelines Annex IV). That is, the scope of the presently claimed " a computer software product " (line 1 of claim 26) can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The Examiner suggests amending the claim such as "A computer-readable medium <u>embodied with a</u> computer program for..." or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

# Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

<sup>(</sup>b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-3, 10-21, 27-29, 31 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Yuen (U. S. 5,949,914).

Regarding claim 1, Yuen discloses a method for sharpening one or more bands of sensor data, the method comprising:

receiving blue, green, red (please note, to column 11, lines 40-41), near-infrared (Please note, to abstract and column 5, lines 22-27), and panchromatic bands of data (please note, to column 5, lines 55-58);

correcting data of the panchromatic band based on the blue, green, red, and near-infrared bands of data (please note, to column 10, lines 1-9); and,

sharpening the data of one or more of the green, red, and near-infrared bands based on the corrected data of the panchromatic band (please note, to column 11, lines 36-46).

Regarding claim 2, Yuen discloses the method of claim 1, further comprising combining the sharpened data of the green, red, and near-infrared bands with the received panchromatic band of data (please note, to column 2, lines 19-35).

Regarding claim 3, Yuen discloses the method of claim 2, further comprising generating an image based on the combined data and displaying the generated image (please note, to column 5, lines 29-32).

Regarding claim 10, Yuen discloses the method of claim 1, wherein the blue, green, red, near-infrared, and panchromatic bands of data are generated by one of an aircraft or satellite sensing system (please note, to column 3, lines 52-54).

Regarding claim 11, Yuen discloses a computer program product residing on a

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computer-readable medium for sharpening one or more bands of sensor data in the visual spectrum, the computer program product comprising:

first computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means for receiving blue, green, red (please note, to column 11, lines 40-41), near-infrared (please note, to abstract and column 5, lines 22-27), and panchromatic bands of data (please note, to column 5, lines 55-58); second computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means for correcting data of the panchromatic band based on the blue, green, red, and near-infrared bands of data (please note, to column 10, lines 1-9); and third computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means for sharpening the data of one or more of the green, red, and near-infrared bands based on the corrected data of the panchromatic band (please note, to column 11, lines 36-46).

Regarding claim 12, Yuen discloses the computer program product of claim 11, further comprising fourth computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means for combining the sharpened data of the green, red, and near-infrared bands with the received panchromatic band of data (please note, to column 2, lines 19-35).

Regarding claim 13, Yuen discloses the computer program product of claim 12, further comprising fifth computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means for generating an image based on the combined data and a means for displaying the generated image (please note, to column 5, lines 29-32).

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Regarding claim 20, Yuen discloses the computer program product of claim 11, wherein the blue, green, red, near-infrared, and panchromatic bands of data are generated by one of an aircraft or satellite sensing system (please note, to column 3, lines 52-54).

Regarding claim 21, Yuen discloses a system for sharpening one or more bands of sensor data, the system comprising: a processor coupled to the input interface, the processor including (please note, to Fig. 9A, element 145): a first component (Fig. 10, element 256) configured to receive blue, green, red (please note, to column 11, lines 40-41, near-infrared (please note, to abstract and column 5, lines 22-27), and panchromatic bands of data (please note, to column 5, lines 55-58); a second component (Fig. 10, element 266) configured to correct data of the panchromatic band based on the blue, green, red, and near-infrared bands of data(please note, to column 10, lines 1-9); a third component (Fig. 10, element 264) configured to sharpen the data of one or more of the green, red, and near-infrared bands based on the corrected data of the panchromatic band (please note, to column 11, lines 36-46); and a fourth component configured to combine the sharpened data of the green, red, and nearinfrared bands with the received panchromatic band of data (Fig. 7, element 92); and a display device coupled to the processor configured to display an image based on the combined data (Fig. 7, element 94).

Regarding claim 28, Yuen discloses the system of claim 21, wherein the blue, green, red, near-infrared, and panchromatic bands of data are generated by one of an aircraft or satellite sensing system (please note, to column 3, lines 52-54).

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Regarding claim 29, Yuen discloses a method for sharpening one or more bands of sensor data, the method comprising:

receiving a plurality of first bands of data at a first resolution level, and a second band of data at a second resolution level, wherein the plurality of bands of data are included within the second band and the first resolution level is less than the second resolution level (Fig. 4, and column 4, lines 57-65); correcting data of the second band based on the plurality of first bands of data (please note, to column 10, lines 1-9); and sharpening the data of one or more of the plurality of first bands based on the corrected data of the second band (please note, to column 11, lines 36-46).

Regarding claim 31, Yuen discloses a computer program product residing on a computer-readable medium for sharpening one or more bands of sensor data in the visual spectrum, the computer program product comprising: first computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means configured to receive a plurality of first bands of data at a first resolution level, and a second band of data at a second resolution level, wherein the plurality of bands of data are included within the second band and the first resolution level is less than the second resolution level (Fig. 4, and column 4, lines 57-65); second computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means configured to correct data of the second band based on the plurality of first bands of data (please note, to column 10, lines 1-9); and third computer program code (please note, to Fig. 9A, element 145 and column 9, lines 16-21) means configured to sharpen the data of one or more of the plurality of first bands based on the corrected data of the second

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band (please note, to column 11, lines 36-46).

Regarding claim 33, Yuen discloses a system for sharpening one or more bands of sensor data, the system comprising: a processor coupled to the input interface, the processor including (please note, to Fig. 9A, element 145. Yuen does not disclose the input interface, however the input interface is inherent in Yuen); a first component (Fig. 10, element 256) configured to receive a plurality of first bands of data at a first resolution level, and a second band of data at a second resolution level, wherein the plurality of bands of data are included within the second band and the first resolution level is less than the second resolution level (Fig. 4, and column 4, lines 57-65); a second component (Fig. 10, element 266) configured to correct data of the second band based on the plurality of first bands of data (please note, to column 10, lines 1-9); a third component (Fig. 10, element 264) configured to sharpen the data of one or more of the plurality of first bands based on the corrected data of the second band; and a fourth component configured to combine the sharpened data with the second band of data. A display device coupled to the processor configured to display an image based on the combined data (please note, to fig. 7, element 94).

### **Allowable Subject Matter**

6. Claims 4-9, 22-27 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### Other Prior Art Cited

7. The prior art made of record and not relied upon is considered pertinent to

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applicant's disclosure.

Sunshine et al. (U. S. 6,741,740 B2) disclose method for selecting representative end member components from spectral data.

Specht et al. (U. S. 6,937,774 B1) disclose apparatus and method for efficiently increasing the spatial resolution of images.

Tom (U. S. 4,683,496) discloses system for and method of enhancing images using multiband information.

Colvocoresses (U. S. 4,313,678) disclose automated satellite mapping system (MAPSAT).

## **Contact Information**

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (571) 272-7458.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Bhavesh Mehta, can be reached at (571) 272-7453. The fax phone number for organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <a href="http://pair-direct.uspto.gov">http://pair-direct.uspto.gov</a>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abolfazl Tabatabai

Patent Examiner

Technology Division 2624

April 12, 2007

A-Tallatalai